

NERRS Science Collaborative Progress Report for the Period 08/31/13 through 02/28/13

Project Title: *Freshwater Inflow: Determining flow regimes in the face of land use change, climate change, and other unknowns*

Principal Investigator(s): Ed Buskey

Project start date: 11/15/2011

Report compiled by: Sally Palmer

Contributing team members and their role in the project:

Sally Palmer: Project coordinator & Fiscal agent

Dr. Ed Buskey: Applied Science Investigator and Principal Investigator

Dr. Tarla Rai Peterson: Collaboration Lead

Dr. Ken Dunton and Dr. Norman Johns: Intended User Representative

Dr. Kiersten Madden and Dr. George Ward: Applied Science Investigator

A. Progress overview:

The overall goal of the project is to improve the quality of environmental flow recommendations for the Guadalupe/San Antonio Bay and Basin by collaborating with local stakeholders and scientists to overcome research barriers and provide additional information and data for the Senate Bill 3 adaptive management process. During this performance period the project team hosted several project team conference calls, one intended user meeting, and conducted media outreach, data collection, and data analysis.

B. Working with Intended Users:

Presentations - Intended users were integrated in the project by participation in several stakeholder meetings.

- On 9/12/13 the project team hosted a stakeholder meeting in Port Aransas, Texas at the Estuarine Research Center. The purpose of this meeting was to present research conducted to date and to continue the mediated modeling component. The meeting summary was sent out to listserv and is posted on the BaseCamp site.

Unanticipated challenges or opportunities

- Freshwater inflow is a challenging problem and our NSC project addresses several components of the issue. It has been a challenge helping stakeholders understand how the seemingly different components of the project work together in the short amount of time available for meetings (without meeting burnout). At a stakeholder meeting held in September, we added a facilitated discussion using the “web-of-life” game to explore how the project components

- (i.e., land use / climate modeling, current meters, blue crab research, and mediated model) affect decision-making related to freshwater inflows.
- In addition, our TIDES fellow, Abbie Sherwin, created a context map. This context map could be presented at the upcoming April meeting as a rough draft, with the participants making suggestions on the placement of arrows and presentation.

Collaboration

- The mediated model (using NetLogo software) was completed and made available to the stakeholders on the project website.
- Keypad polling continues to be a mechanism that is being used to generate feedback from participants for the mediated modeling, as well as the other three components of the project.
- Abbie Sherwin, TIDES Intern, also developed a video that explains the environmental research being conducted and why it is important. (Available on project website)
- A proposal was submitted and funded to transfer the collaboration knowledge from this project and others to the Reserve System. The project is called “Bridging the Gulfs” and will result in two workshops (Maine in Fall 2014; Texas in Winter 2015) to present collaborative learning techniques.

C. Progress on project objectives for this reporting period:

One large stakeholder meeting was held on 09/12/13 to involve stakeholders in the research conducted to date and continue the mediated model development.

Presentations were provided to intended users to help them familiarize themselves with the project and upcoming information needs and data to be gathered. During the next six months, the project team is scheduled to have another workshop on 4/10/14 with intended users to update stakeholders on project progress. Stakeholder feedback that is needed will be gathered at this time.

Data collection is on-track and on-going. Leveraging has occurred to conduct additional research projects (i.e., Environmental Cooperative Science Center research on *Rangia* sp. clams, and juvenile blue crab work). This has allowed the project team to move beyond the original scope of the proposed project and meet additional stakeholder needs. Two research projects have been completed: (1) a *Rangia* sp. clam abundance survey has been conducted within the project area, and (2) a student thesis project has examined blue crab larvae responses to different salinity regimes. In addition, there will be several proposals submitted to the Texas Water Development Board opportunity to continue research efforts related to needs identified by stakeholders (e.g., focal species and *Rangia* sp. clams).

Deployment of current meters and data collection is partially complete. The current meter research was developed in response to a need for data that better characterizes circulation patterns between adjacent bay systems. Data has been collected for the Aransas Bay system. The current meters will be deployed in other areas of the estuary this spring after a meeting to determine appropriate locations with project team members and intended users (*i.e.*, Texas Water Development Board, Guadalupe Blanco River Authority). Researchers are also working with state and non-governmental partners (*i.e.*, Texas Water Development Board and San Antonio Bay Foundation) to provide technical assistance for deployment of current meters and expand the current meter study to also include San Antonio Bay.

D. Benefit to NERRS and NOAA:

Freshwater inflow is the biggest resource management issue in Texas, as well as many other states. This project will provide much needed information on freshwater inflow management. Results from this project will be highlighted in a “Teachers On The Estuary” training in summer of 2014. The mediated modeling component is of interest to the NERRS and a transfer project was funded to help distribute the information and lessons learned.

Meetings Held or Participated in:

08/05/13	Attended BBASC sub-committee meeting on upcoming funding opportunities through the Texas Water Development Board – provided updates on project results and future research needs
09/12/13	Stakeholder meeting at Estuarine Research Center
09/26/13	A project update was provided to Reserve Advisory Board members
1/16/14	A project update was provided to Reserve Advisory Board members